

WHAT IS CLAIMED IS:

1. An optical disc reproducing apparatus comprising:
a spindle motor which drives the rotation of an optical disc;
a light pickup which emits laser light to said optical disc and in turn
receives reflective light from said optical disc in order to scan and
reproduce information recorded on said optical disc;
5 a motor control unit which controls said spindle motor based on a
sync signal contained in a reproducing signal output from said light pickup
at the time of reproduction;
a mirror detection unit which detects mirror information in relation
10 to scanned mirror surfaces on said optical disc based on an RF signal
corresponding to said reproducing signal when said optical disc runs away;
and
15 a rotation control unit which detects the direction of rotation of said
optical disc based on said mirror information detected by said mirror
detection unit.
2. The optical disc reproducing apparatus according to claim 1,
wherein
the direction of rotation of said optical disc is detected by comparing
an initial mirror count value obtained by counting a mirror pulse for a
5 predetermined period of time every time said mirror surface which is
detected based on said RF signal is scanned and a mirror count value
during braking obtained by counting said mirror pulse for the
predetermined period which is detected based on said RF signal when said
spindle motor is applied with a brake signal.
3. The optical disc reproducing apparatus according to claim 2
further comprising:
a tracking servo mechanism which controls the tracking of said
optical disc by said light pickup, wherein
5 said rotation control unit includes:

first count value calculation means which calculates said initial mirror count value by counting for the predetermined period of time said mirror pulse detected based on said RF signal when said tracking servo mechanism is turned off;

10 second count value calculation means which calculates a mirror count value during braking by counting for the predetermined period of time said mirror pulse detected based on said RF signal when said spindle motor is applied with said brake signal; and

15 rotational direction detection means which detects the direction of rotation of said optical disc based on the results of a comparison between said initial mirror count value calculated by said first count value calculation means and said mirror count value during braking calculated by said second count value calculation means,

20 in braking said optical disc that is running away, said spindle motor is applied with said brake signal in the reverse direction of rotation when said optical disc is detected to be rotating in the normal direction by said rotational direction detection means, and is applied with said brake signal in the normal direction of rotation when said optical disc is detected to be rotating in the reverse direction.

4. The optical disc reproducing apparatus according to claim 3, wherein

5 said rotation control unit further includes tracking servo off means which turns off said tracking servo mechanism, after it has been shown that the laser light onto said optical disc has attained proper focus based on a focus error signal contained in said reproducing signal outputted from said light pickup before the calculation of said initial mirror count value of said first count value calculation means.

5. The optical disc reproducing apparatus according to claim 1, wherein

said rotation control unit applies said spindle motor with a brake signal in the direction opposite to said detected direction of rotation.

6. The optical disc reproducing apparatus according to claim 5,
wherein

the direction of rotation of said optical disc is detected by comparing
an initial mirror count value obtained by counting a mirror pulse for a
predetermined period of time every time said mirror surface which is
detected based on said RF signal is scanned and a mirror count value
during braking obtained by counting said mirror pulse for the
predetermined period of time which is detected based on said RF signal
when said spindle motor is applied with said brake signal.

7. The optical disc reproducing apparatus according to claim 6
further comprising:

a tracking servo mechanism which controls the tracking of said
optical disc by said light pickup, wherein

5 said rotation control unit includes:

first count value calculation means which calculates said initial
mirror count value by counting for the predetermined period of time said
mirror pulse detected based on said RF signal when said tracking servo
mechanism is turned off;

10 second count value calculation means which calculates a mirror
count value during braking by counting for the predetermined period of
time said mirror pulse detected based on said RF signal when said spindle
motor is applied with said brake signal; and

15 rotational direction detection means which detects the direction of
rotation of said optical disc based on results of a comparison between the
initial mirror count value calculated by said first count value calculation
means and the mirror count value during braking calculated by said second
count value calculation means,

20 in braking said optical disc that is running away, said spindle motor
is applied with said brake signal in the reverse direction of rotation when
said optical disc is detected to be rotating in the normal direction by said
rotational direction detection means, and is applied with said brake signal
in the normal direction of rotation when said optical disc is detected to be

rotating in the reverse direction.

8. The optical disc reproducing apparatus according to claim 7, wherein

5 said rotation control unit further includes tracking servo off means which turns off said tracking servo mechanism, after it has been shown that the laser light onto said optical disc has attained proper focus based on a focus error signal contained in said reproducing signal output from said light pickup before the calculation of said initial mirror count value of said first count value calculation means.

9. The optical disc reproducing apparatus of claim 5 further comprising:

5 a tracking servo mechanism which controls the tracking of said optical disc by said light pickup, wherein

5 said rotation control unit includes:

10 first count value calculation means which calculates said initial mirror count value by counting for a predetermined period of time said mirror pulse detected based on said RF signal when said tracking servo mechanism is turned off;

10 second count value calculation means which calculates a mirror count value during braking by counting for the predetermined period of time said mirror pulse detected based on said RF signal when said spindle motor is applied with said brake signal; and

15 rotational direction detection means which detects the direction of rotation of said optical disc based on the results of a comparison between the initial mirror count value calculated by said first count value calculation means and the mirror count value during braking calculated by said second count value calculation means,

20 in braking said optical disc that is running away, said spindle motor is applied with said brake signal in the reverse direction of rotation when said optical disc is detected to be rotating in the normal direction by said rotational direction detection means, and is applied with said brake signal

in the normal direction of rotation when said optical disc is detected to be rotating in the reverse direction.

10. The optical disc reproducing apparatus of claim 9, wherein
said rotation control unit further includes a tracking servo off means
which turns off said tracking servo mechanism, after it has been shown
that the laser light onto said optical disc has attained proper focus based on
5 a focus error signal contained in said reproducing signal output from said
light pickup before the calculation of said initial mirror count value of said
first count value calculation means.